

CLAIMS

What is claimed is:

1. A method for operating a mobile station, comprising steps of:

(a) storing information in a memory of the mobile station, the stored information comprising an ordered list of frequency bands, each frequency band comprising at least one channel, the stored information further comprising an identity of a band wherein an acceptable control channel was last located;

(b) in response to a user invoking a search procedure to locate a new non-public system, accessing the memory to determine the identity of the band wherein an acceptable control channel was last located, and marking the band wherein the acceptable control channel was last located as a band to be searched;

(c) collecting signal strength measurements on channels in the band to be searched and executing a channel search procedure to locate a control channel of a desired non-public system within the band to be searched;

(d) if a desired non-public system is not located in the band to be searched, accessing the memory to obtain a next band to be searched from the ordered list of frequency bands and marking the next band as the band to be searched; and

repeating steps (c) and (d) until either the ordered list of frequency bands is exhausted or a desired non-

2025-11-10 10:52:30

public system is located.

2. A method as in claim 1, wherein the desired non-public system is one of a Residential system or a Private system.

3. A method as in claim 1, wherein the control channel is a digital control channel (DCCH).

4. A method as in claim 1, wherein at least one frequency band is an 800 MHz frequency band, and wherein at least one other frequency band is a 1900 MHz frequency band.

5. A method as in claim 1, wherein if the step of accessing the memory to determine the identity of the band wherein an acceptable control channel was last located is not successful, the method instead includes a step of accessing the memory to obtain a predetermined band to be searched from the ordered list of frequency bands and marking the predetermined band as the band to be searched.

6. A method as in claim 5, wherein the predetermined band is the first band in the ordered list of frequency bands.

7. A method as in claim 1, wherein the step of storing information is accomplished in cooperation with a user interface of the mobile station.

8. A method as in claim 1, wherein the step of storing information is accomplished by receiving the information over the air from a remote location.

9. A mobile station, comprising:

a RF transceiver for bidirectionally communicating with base stations of public or autonomous communications systems;

a user interface for displaying information to a user and for receiving an input from a user;

a memory for storing information, the stored information comprising an ordered list of frequency bands, each frequency band comprising at least one channel, the stored information further comprising an identity of a band wherein an acceptable control channel was last located; and

a controller coupled to said transceiver, to said user interface, and to said memory, said controller being responsive to a user invoking a search procedure to locate a new non-public system for accessing said memory to determine the identity of the band wherein an acceptable control channel was last located, and for marking the band wherein the acceptable control channel was last located as a band to be searched, said controller tuning said transceiver for collecting signal strength measurements on channels in the band to be searched and executing a channel search procedure to locate a control channel of a desired non-public system within the band to be searched, said controller being responsive to a condition that a desired non-public system is not located in the band to be searched, for accessing said memory to obtain a next band to be searched from said ordered list of frequency bands and for marking the next band in said ordered list as the band to be searched, said controller continuing to collect signal strength

2025 RELEASE UNDER E.O. 14176

measurements and executing the search procedure until either the ordered list of frequency bands is exhausted or a desired non-public system is located.

10. A mobile station as in claim 9, wherein the desired non-public system is one of a Residential system or a Private system.

11. A mobile station as in claim 9, wherein the control channel is a digital control channel (DCCH).

12. A mobile station as in claim 9, wherein at least one frequency band is an 800 MHz frequency band, and wherein at least one other frequency band is a 1900 MHz frequency band.

13. A mobile station as in claim 9, wherein said controller is responsive to a condition wherein accessing said memory to determine the identity of the band wherein an acceptable control channel was last located is not successful, for instead accessing said memory to obtain a predetermined band to be searched from the ordered list of frequency bands and for marking the predetermined band as the band to be searched.

14. A mobile station as in claim 13, wherein said predetermined band is the first band in the ordered list of frequency bands.

15. A mobile station as in claim 9, wherein at least a portion of said ordered list of frequency bands is stored in said memory in cooperation with said user interface.

16. A mobile station as in claim 9, wherein at least a portion of said ordered list of frequency bands is stored in said memory by receiving information over the air from

003696 04494
T03710 500500

a remote location.

17. A method for operating a mobile station, comprising steps of:

(a) storing information in a memory of the mobile station, the stored information comprising a list having one or more entries, each entry corresponding to a frequency band comprising at least one channel, the stored information further comprising an identity of a frequency band wherein an acceptable digital control channel (DCCH) was last located;

(b) in response to a search procedure being invoked to locate a desired one of a Residential system or a Private system, accessing the memory to determine the identity of the frequency band wherein the acceptable DCCH was last located, and marking the band as a band to be searched, else if the identity of the band wherein the acceptable DCCH was last located is not available, then selecting a predetermined entry in the list of frequency bands and marking the corresponding frequency band as the band to be searched;

(c) collecting signal strength measurements on channels in the band to be searched and executing a channel search procedure to locate a control channel of a desired Residential system or Private system within the band to be searched;

(d) if a desired Residential system or Private system is not located in the band to be searched, accessing the memory to obtain a next entry from the list of frequency bands and marking the corresponding band as the band to be searched; and

2025 RELEASE UNDER E.O. 14176

